WRIA 9 On-The-Ground Actions for Salmon Habitat in the Green/Duwamish and Central Puget Sound Watershed

Table adapted from similar tables in the WRIA 9 *Near-Term Action Agenda* (May 2002).

Projects listed were recommended in the *Near-Term Action Agenda* or are consistent with it and the *Technical Strategy for Salmonid Conservation and Recovery* (June 2003).

Sub-Watershed	Project Name and Status	Project Description	Benefits to Salmon	Factors of Decline Addressed	Strategy Elements Addressed
Upper Green River	Tacoma diversion dam upstream fish passage facility ***Status:* Complete**	Construct fish ladder and trap and haul system to pass fish upstream over the dam. Also reshape channel in front of dam to make fish ladder more attractive to fish	Increased spawning area for adults of all species	Fish passage	CONNECT Upper Green River subwatershed
Upper Green River	Howard Hanson Dam downstream fish passage facility ***Status:* Begun in 2003 – Completion scheduled for 2006**	Design and construct a downstream fish passage facility at Howard Hanson Dam	Increased output of juvenile salmon of all species	Hydromodification	CONNECT Upper Green River to rest of watershed
Upper Green River	Upper Green River tributary culvert replacement – Sweeney Creek ***Status:* Complete**	Replace existing culvert and improve riparian corridor	Access to habitat for coho, steelhead and possibly bull trout	Fish passage, riparian condition	CONNECT tributaries, rehabilitate tributary habitat
Middle Green River	Reconnection of Porter Levee Side-channel ***Status:* Complete**	Reconnection of historic river meander bend as side channel	Access to habitat for chinook, and other salmon species	Hydromodification and riparian condition	RESTORE access to side channels, rehabilitate tributary habitat
Middle Green River	Re-alignment of O'Grady Creek ***Status:* Complete**	Re-alignment of O'Grady Creek and floodplain connection	Improved stream function and riparian corridor	Hydromodification and riparian condition	RESTORE riparian corridor
Middle Green River	Restoration/stewardship of parks and lands adjacent to Green River: Whitney Bridge Park ***Status:* Work on-going annually**	Removal and control of invasive plant species, replant with native species	Improved riparian corridor	Non-native species and riparian condition	RESTORE riparian corridor
Middle Green River	Restoration/stewardship of parks and lands adjacent to Green River: O'Grady Park ***Status:* Work on-going annually**	Removal and control of invasive plant species, replant with native species	Improved riparian corridor	Non-native species and riparian condition	RESTORE riparian corridor
Middle Green River	Restoration/stewardship of parks and lands adjacent to Green River: Porter Levee ***Status:* Work on-going annually**	Removal and control of invasive plant species, replant with native species	Improved riparian corridor	Non-native species and riparian condition	RESTORE riparian corridor

Completed projects

Sub-Watershed	Project Name and Status	Project Description	Benefits to Salmon	Factors of Decline Addressed	Strategy Elements Addressed
Middle Green River	Restoration/stewardship of parks and lands adjacent to Soos Creek: Hatchery Park ***Status:* Work on-going annually**	Removal and control of invasive plant species, replant with native species	Improved riparian corridor	Non-native species and riparian condition	RESTORE riparian corridor
Middle Green River	Newaukum Creek Acquisition ***Status:* Complete**	Acquire key parcels on Newaukum Creek	Protects currently functioning habitat for all species	Prevents further harm	PROTECT critical habitats and habitat-forming processes
Middle Green River	Metzler Park Side Channel Acquisition ***Status:* Begun in 2000 – Completion scheduled for 2005**	Acquire key parcels on Metzler Park Side Channel	Protects currently functioning habitat for all species	Permits future side channel restoration	PROTECT critical habitats and habitat-forming processes; permits future restoration
Middle Green River	Kanaskat North Acquisition ***Status:* Begun in 2000 – Completion scheduled for 2005 (4 acquisitions complete, 2 in review)**	Acquire key parcels on Kanaskat North Channel	Protects currently functioning habitat for all species	Permits future side channel restoration	PROTECT critical habitats and habitat-forming processes; permits future restoration
Middle Green River	Kanaskat II Acquisition ***Status:* Complete**	Acquire over 150 acres to protect chinook spawning areas	For all species, preserves key habitat areas and processes	Protects functioning habitat	PROTECT critical habitats
Middle Green River	Kanaskat III Acquisition ***Status:* Begun in 2003 – Completion scheduled for 2004**	Acquire key parcels to protect chinook spawning areas	For all species, preserves key habitat areas and processes	Protects functioning habitat	PROTECT critical habitats
Middle Green River	Big Spring Creek Acquisition ***Status:* Begun in 2000 – Completion scheduled for 2004**	Acquire key parcels in the headwaters of Big Spring Creek	For all species, protects water quality	Protects functioning habitat	PROTECT critical habitats
Middle Green River	Middle Green Reach Acquisition ***Status:* Begun in 2002 – Completion scheduled for 2006**	Acquire up to 110 acres near chinook spawning habitat	For all species, preserves key habitat areas and processes	Protects functioning habitat	PROTECT critical habitats
Middle Green River	Newaukum Creek wetland planting ***Status:* Complete, plantings continue annually**	Volunteers helped plant native plants in this wetland mitigation upstream of Mahler Park	Wetlands protect water quality and provide nutrients for all species	Riparian condition, water quality	REHABILITATE critical habitat-forming processes
Middle Green River	Salmon carcass distribution ***Status:* Work on-going annually**	Annually distribute chinook and coho carcasses	Adds nutrients for all species	Riparian condition	REHABILITATE critical habitat-forming processes

Completed projects

Sub-Watershed	Project Name and Status	Project Description	Benefits to Salmon	Factors of Decline Addressed	Strategy Elements Addressed
Middle Green River	North Fork Newaukum Creek in-stream restoration ***Status:*** **Complete**	Restored 250 feet of creek by regrading bank slopes and installing large woody debris	Provides sediment sources, habitat complexity, shade, nutrients and large woody debris for all species	Hydromodification, Riparian condition, sediment transport	REHABILITETE critical habitat-forming processes
Middle Green River	North Fork Newaukum Creek in-stream restoration ***Status:*** **Complete**	Plant riparian buffers at newly completed in-stream restoration project	Provides shade, nutrients, and large woody debris for all species	Riparian condition	REHABILITATE aquatic habitat within tributaries
Middle Green River	Large woody debris re-introduction – Phase 1 ***Status:*** **Complete**	Place large woody debris in 3-4 locations downstream of Tacoma diversion dam. Allow flood flows to mobilize and reintroduce the wood into the channel	Restores habitat complexity for all species	Hydromodification	REHABILITATE critical habitat-forming processes
Middle Green River	Mainstem gravel supplementation – phase 1 ***Status:*** **Complete; additional work on-going annually**	Place up to 3900 cubic yards of gravel annually in the Middle Green River	Protects and enhances spawning for all species	Hydromodification	REHABILITATE critical habitat-forming processes
Middle Green River	Kanaskat North side channel ***Status:*** **Design in 2005-2006; construction start depends on funding**	Construct permanent access between the river and the downstream end of this former river meander, and tie the channel into a supplemental water source	Provides refuge habitat for all species	Hydromodification	RESTORE connection of the mainstem with side channels
Middle Green River	Lones Levee ***Status:*** **Design in 2005-2006; construction start depends on funding**	Remove training levee, replace with small setback levee well landward and with a significant buried toe, relocate the lower portion of Burns Creek into its original channel	Increases habitat quality for all species	Hydromodification	RESTORE aquatic habitat within the mainstem
Middle Green River	Newaukum Creek ***Status:*** **Construction start in 2004**	Phase 1 proposal: restore portion of the creek upstream of its confluence with Big Spring Creek	Increases habitat complexity for all species	Hydromodification, sediment transport	RESTORE critical interrupted processes
Middle Green River	Volunteer Revegetation ***Status:*** **Construction start in 2005**	Provide plants, wood and other materials for riparian restoration projects conducted by volunteers, schools and other stakeholder groups	Provides shade, nutrients and large woody debris for all species	Riparian condition, water quality	RESTORE aquatic habitat within the mainstem
Middle Green River	Meridian Valley Creek Realignment ***Status*****: Construction start in 2004**	Remove Meridian Valley Creek for concrete flume adjacent to SE 256th Street and create new stream channel.	Improved riparian corridor	Hydromodification and riparian condition	RESTORE riparian corridor
Middle Green River	Lake Meridian Outlet ***Status:*** **Construction start in 2005**	Remove Lake Meridian Outlet from roadside ditch and create new stream channel	Improved riparian corridor	Hydromodification and riparian condition	REHABILITATE riparian corridor

Completed projects

Sub-Watershed	Project Name and Status	Project Description	Benefits to Salmon	Factors of Decline Addressed	Strategy Elements Addressed
Lower Green River	Green River Natural Resources Area enhancement project ***Status:* Work on-going annually**	Multi-purpose stormwater management/ wetland enhancement; wildlife and fisheries habitat project comprising 300 acres on Springbrook Creek	Improves water quality for chinook, chum, coho, cutthroat, and winter steelhead	Water quality, hydrology, riparian conditions, fish passage	RESTORE habitat-forming processes
Lower Green River	Riverview Park ***Status:* Construction start in 2005**	Construction of a backwater slough which will provide summer rearing habitat and fall and winter flood refuge	Provide habitat and refuge	Hydromodification and riparian condition	RESTORE off-channel habitat, riparian corridor
Lower Green River	Lower Green River Acquisition (Rosso Property) ***Status*: Begun in 2003 – Completion scheduled for**	Acquire key parcels of riverfront property – future restoration site	For all species, preserves key habitat areas and processes	Protects functioning habitat	RESTORE critical habitats, habitat forming processes
Lower Green River	Mullen Slough Restoration ***Status:* Begun in 2002 – Completion scheduled for 2007**	Create off-channel refuge, restore riparian zone and adjacent wetlands; remove garbage, invasive species, replant	Restores habitat complexity and function for chinook and coho	Riparian condition, hydro-modification, non-native species	REHABILITATE aquatic habitat in the tributaries
Lower Green River	Mullen Slough Acquisition ***Status:* Begun in 2003 – Completion scheduled for 2004**	Acquire key parcels of slough property to permit future restoration	For all species, opportunity for future restoration	Opportunity for future restoration	RESTORE critical habitats
Lower Green River	Narita Levee ***Status:* Complete**	Restore in-stream and riparian habitat, replace non-native vegetation with native, reduce erosion, add large woody debris	Restores habitat complexity and function for all species	Riparian condition, sediment transport hydro-modification	REHABILITATE aquatic habitat in the mainstem
Lower Green River	Auburn Narrows Side Channel Re-connection ***Status:* Construction start 2004**	Re-connect historic river meander as side-channel	Access to habitat for chinook and other salmon species	Hydromodification and riparian condition	RESTORE access to side channels, rehabilitate habitat
Lower Green River	Auburn Narrows Wetland Restoration ***Status:* Construction start 2004**	Re-connect riparian wetland	Improved habitat, water quality	Hydrology	RESTORE water quality and storage
Lower Green River	Fenster Mainstem Maintenance ***Status:* Design 2006-7**	Construct bioengineering alternatives to bank stabilization and relocate the bank landward of its present location	Increase habitat complexity and quality for all species	Hydromodification, riparian condition	REHABILITATE aquatic habitat in the mainstem
Elliott Bay/Duwamish	Terminal 107 Stewardship ***Status:* Work on-going annually**	Control invasive weeds, replant and monitor	Maintain rearing habitat primarily coho and cutthroat trout	Loss of habitat in riparian corridor	RESTORE habitat quality
Elliott Bay/Duwamish	Riverbend Hill Acquisition ***Status:* Complete**	Acquire key parcels of riverfront property – future restoration site	For all species, preserves key habitat areas and processes	Protects functioning habitat	RESTORE critical habitats

Completed projects

Sub-Watershed	Project Name and Status	Project Description	Benefits to Salmon	Factors of Decline Addressed	Strategy Elements Addressed
Elliott Bay/Duwamish	Site 1/Duwamish Acquisition ***Status:*** **Complete**	Acquire key property in the intertidal mixing zone – future restoration site	For all species, especially important for juvenile chinook	Loss of habitat in the migratory corridor	REHABILITATE habitat area
Elliott Bay/Duwamish	Codiga Farms side channel ***Status:*** **Complete**	Construction of side channel and inter-tidal marsh	Creates rearing habitat for all species	Loss of habitat in the migratory corridor	REHABILITATE habitat area
Elliott Bay/Duwamish	North Wind's Weir Intertidal Restoration (formerly Site 1/Duwamish) ***Status:*** **Construction start in 2004**	Restore intertidal habitat within the lower Duwamish River including mudflat and saltmarsh	Creates rearing habitat	Loss of habitat in the migratory corridor	REHABILITATE habitat area
Elliott Bay/Duwamish	Cecil B. Moses Park ***Status:*** **Complete**	Construct 1.03-acre intertidal basin with connection to the Duwamish	Creates rearing habitat for all species	Loss of habitat in the migratory corridor	REHABILITATE habitat area
Nearshore	Seahurst Park Sea Wall Assessment ***Status:*** **Complete**	Master Plan of Seahurst Park with recommendation to remove seawall and restore beach	Improve marine shoreline conditions, habitat forming processes	Loss of habitat in migratory corridor, sediment quality, alteration of habitat forming processes, riparian condition	RESTORE nearshore habitat conditions
Nearshore	Seahurst Park Restoration ***Status:*** **Construction in 2005**	Restore nearshore conditions for use by juvenile chinook, chum, coho, sockeye and steelhead. Key beachfeeding bluff zone	Improve marine shoreline conditions, habitat forming processes	Loss of habitat in migratory corridor, sediment quality, alteration of habitat forming processes, riparian condition	RESTORE nearshore conditions for benefit to juvenile chinook, chum, coho, sockeye, and steelhead; improves habitat for forage fish and other benthic prey.
Nearshore	Seahurst Park Restoration Enhanced Monitoring ***Status:*** **Monitoring begun in 2004**	Gathering and analysis of survey of epibenthic and benthic fauna for baseline information; beach topography and profile information to track and analyze sediment movement on restored beach	Better understanding of key habitat features for project implementation	Better understanding of factors of decline	Will guide nearshore restoration projects for salmonid species
Nearshore	Eagle Landing Park Acquisition (Formerly Branson Acquisition) ***Status:*** **Complete**	Acquire over 6.27 acres of property in key nearshore zone	Protection of rearing habitat, protection of juvenile, adult food supply, protection of habitat-forming processes	Loss of habitat in migratory corridor, sediment quality, alteration of habitat forming processes, riparian condition	PROTECT one of the last undeveloped pieces of mainland King county shoreline as salmon habitat
Nearshore	Massey Creek Stewardship Project ***Status*****: Work on-going annually**	Control invasive weeds, replant and monitor	Maintains rearing habitat primarily coho and cutthroat trout	Loss of habitat in riparian corridor	REHABILITATE habitat quality
Nearshore	Stewardship for GSA marsh, Hamm Creek, Puget Creek, Terminal 105, Turning Basin ***Status:*** **Completion scheduled for 2004**	Provide upkeep, stewardship and monitoring for restoration projects in the Duwamish Estuary	Maintains rearing habitat for all species	Loss of habitat in the migratory corridor, non-native species alternation of habitat-forming processes	RESTORE habitat quality

Completed projects